

Natural Gas
in
Alberta
and
British Columbia

AND ITS
DEVELOPMENT
FOR THE BENEFIT
OF
CANADA

WESTCOAST TRANSMISSION COMPANY
LIMITED

130 sugar
35 lard
70 meat.
Kings

sugar → 130
Pork & Beans → 35
Tea → 6.0
lard → 35
porridge → 25
yeast → 0
meat → 4.0
Batteries → 34
Kings → 30
Shells → 30
rice → 12
spices → 10
Naples → 5.0
Toms → 3.0
Total → 6.00

130
35
6.0
35
6.5
7.0
4.0
35
30
3.0
1.0
5.0
2.5
2.50
2.00
8.65
8.65
9.50

11.25
9.50

19.75

Natural Gas in Alberta and British Columbia

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WESTCOAST TRANSMISSION COMPANY LIMITED

PREFACE

The question as to whether the Province of Alberta should allow production of natural gas for sale outside the Province is of vital concern to all people in Alberta.

The manner in which gas will be collected and the route or routes by which it will be transported to outside markets are equally of vital importance not only to Albertans but to all Western Canadians and Canada generally.

This booklet has been prepared to bring the facts squarely before the interested parties, and to demonstrate that in any plan to market gas outside Alberta the first use of the gas must be given Canadians before export to the United States is considered.

SUMMARY

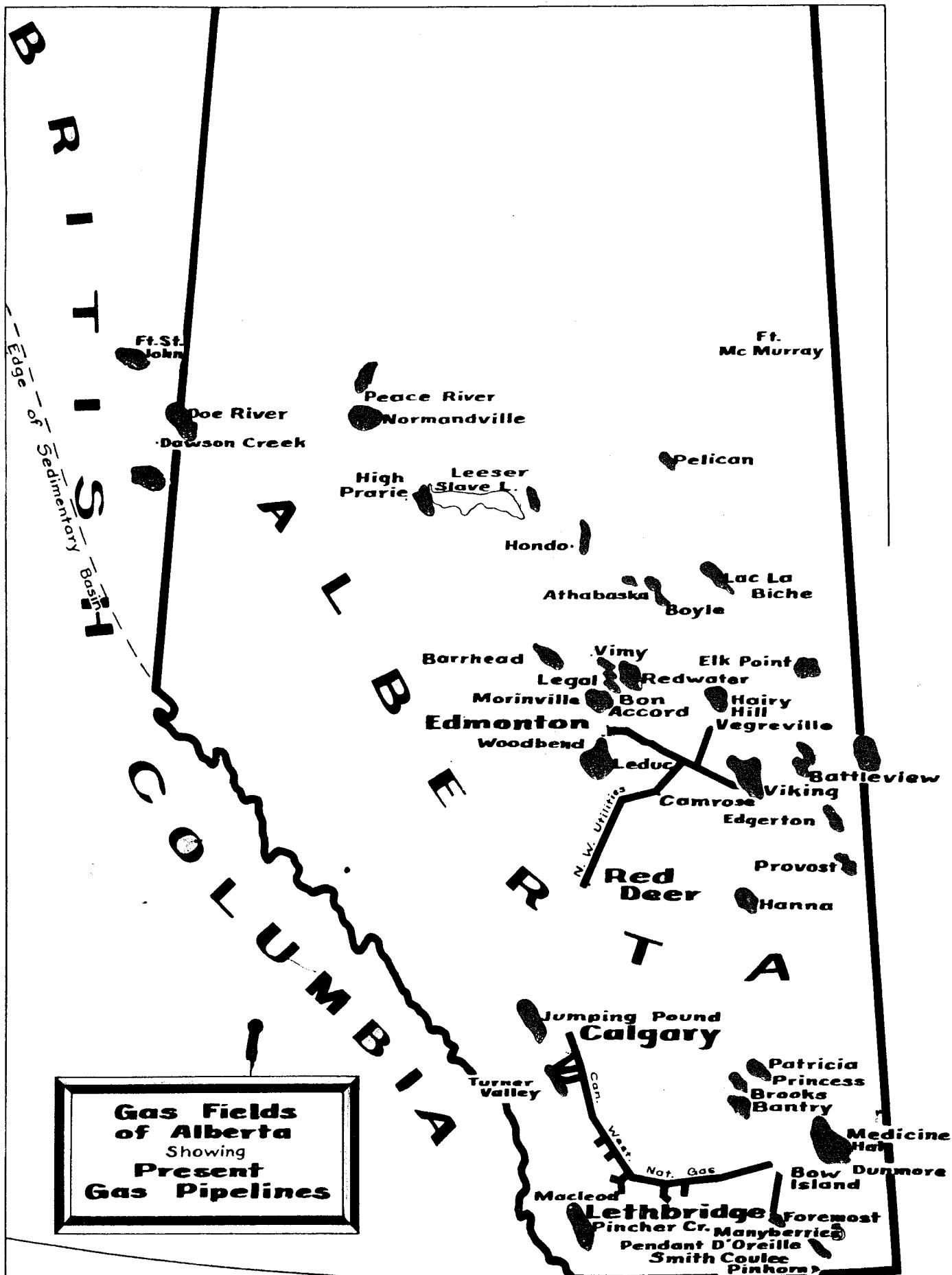
The benefits to be derived from the pipeline and gathering system of Westcoast Transmission Company Limited may be summarized under two main headings:

A. Alberta Requirements:

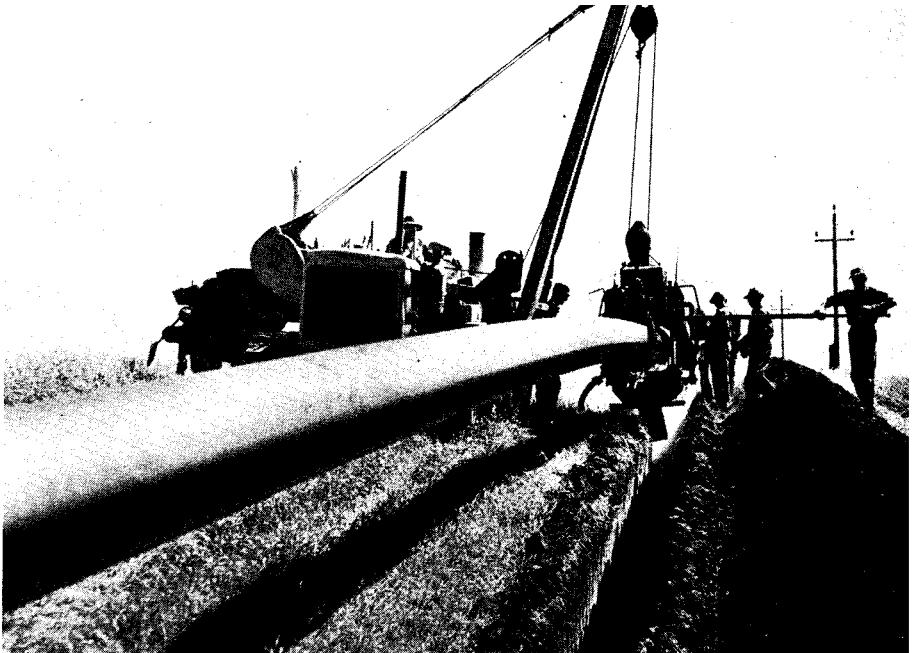
- 1. The people of Alberta will have first call on all the gas reserves of the Province.**
- 2. The gas gathering system will link up the gas fields with the present distribution systems, bringing all the gas to Alberta consumers first.**
- 3. Many more Albertans will have gas available than are now being served.**
- 4. Those Albertans now being served will be guaranteed a continuous and uninterrupted future gas supply at lowest possible cost.**
- 5. Both oil and gas development all over the Province will be encouraged and accelerated by reason of the fact that markets will be provided for both products.**

B. Canadian Requirements:

- 1. Surplus Alberta gas will serve Canadians first before any gas is taken outside Canada.**
- 2. The gas gathering system will provide a source of supply for the transmission system east to Winnipeg, a large Canadian requirement.**
- 3. The all Canadian route to the Pacific Coast will keep control of the gas in Canada until the most Canadians have first been served.**
- 4. The most United States dollars will be spent in Canada in its construction and the greatest number of dollars received in payment of the gas.**
- 5. More Canadian employment will result both in construction and future maintenance than in any other proposed route.**
- 6. The creation of new industry in Canada will be encouraged in such as steel, rolling mills, manufacturing of valves, tanks, fittings, and other material requirements of the transmission system.**
- 7. As a national defence measure it will be invaluable in distributing vital fuel requirements to strategic centers on the Pacific Coast.**
- 8. No other proposal to transport gas to the Pacific Coast will provide all these necessary and vital requirements.**



*Pipe Line
Construction
Coating the Pipe*



Courtesy of Canadian Western Natural Gas Co. Limited

INTRODUCTION

The Government of the Province of Alberta has full realization of its responsibilities to the people of Alberta in the question of supplying natural gas to markets outside the Province.

An exhaustive enquiry into the natural gas situation in Alberta was made by the Dinning Commission. This Commission was authorized November 2nd, 1948, and brought in its report March 8th, 1949. The report covered in great detail all points with reference to:

- A. The existing and proven gas reserves within the Province.
- B. The estimated potential gas reserves within the Province.
- C. The present domestic, industrial and commercial consumption of natural gas within the Province.
- D. The estimate of future domestic, commercial and industrial requirements for natural gas within the Province.

The Commission also reported at length on other matters surrounding the use of natural gas in relation to the effect on the people of Alberta.

The members of the Commission and the Government are to be congratulated on

the thoroughness of the enquiry and the good workmanship of its presentation.

A special session of the Legislature was held in July, 1949, at which session legislation was enacted setting out the procedure to be followed should the Government decide to permit the production of natural gas for sale outside the Province.

The legislation conferred broad powers in regulating gas and oil production on the Petroleum and Natural Gas Conservation Board, to whom all applications for gas export are to be made. The Board, after complete enquiry into all phases of the application and with particular regard as to how it would affect the people of Alberta, makes its recommendation to the Government. The final decision rests with the Government.

The natural gas situation in Alberta has been the subject of the most careful and intelligent study by the entire Government, the legislation was subjected to the severest scrutiny, and good conservation and production practices under the Petroleum and Natural Gas Conservation Board are assured.

The people of the Province of Alberta may be sure that their interests are fully protected and in the best possible hands.

THE NATURAL GAS SITUATION IN ALBERTA

Proven Reserves:

The Dinning Commission, in its report to the Alberta Government March 8th, 1949, showed the **proven marketable** natural gas reserve of the Province as at the end of 1948 to be 3 trillion, 490 billion cubic feet. (Page 47—Dinning Commission Report).

Actual Consumption of Natural Gas:

The total consumption of Natural Gas for the year 1948 was reported by the Dinning Commission as follows:

Calgary System (Canadian Western Natural Gas Co.)	19.609 Billion Cu. Ft.
Edmonton System (Northwest Utilities Ltd.)	12.190 Billion Cu. Ft.
Remainder of Province	5.466 Billion Cu. Ft.
<hr/>	
Total 1948 Consumption	37.265 Billion Cu. Ft.

At the 1948 rate of Consumption, the **proven Marketable** Gas reserves would last over 90 years.

It is also interesting and important to note that **since 1912 the total sales of gas** made by both the Canadian Western Natural Gas Co. and Northwest Utilities Ltd. up to the end of 1948, amounted to less than **400 billion cubic feet.**

Further Reserves:

In reporting the proven reserves of natural gas no figures were included for such important subsequent discoveries as Pincher Creek, Barrhead, Lac La Biche, Hanna, Pinhorn, Peace River, Pouce Coupe, Smith, and Pelican Rapids. Since the report was written, further gas discoveries have been made at St. Paul, Willingdon, Clyde, Manawan Lake, Stettler, Hardisty, Ellscott, Boyle, Morinville, Calahoo, Tawatinaw, Perryvale, Picardville, Figure Lake, Lily, Jeffrey, Castor, Ranford, Whitemud, Ashmont, Bon Accord, Golden Spike, Spruce Grove and just recently the oil-gas discoveries by Imperial Oil Limited at Normandville and

Excelsior. These new discoveries indicate further huge reserves of gas far beyond the needs of the people of Alberta for the present or foreseeable future.

Dr. George S. Hume, Director, Mines, Forests and Scientific Services Bureau, Department of Lands and Forests, Dominion Government, speaking on natural gas development in Alberta at a meeting of the Canadian Institute of Mining and Metallurgy, October 19, 1949, said, "I expressed my opinions in regard to what I considered should be the logical development in an article published in WESTERN BUSINESS, a Vancouver publication, in November, 1947. Since that time Mr. Ignatieff and I have made a rather exhaustive study of the gas reserves in Alberta, a report which we hope to bring up to date at the end of this year, and I am more convinced than ever that after reserving sufficient gas for Alberta for the next century, there is plenty of scope for pipe line construction, both to the Pacific Coast and perhaps even to Ontario, supplying cities and towns en route."

Markets Make Reserves

(The following paragraph is a quotation from the article "Natural Gas in Canada" by Dr. George S. Hume which appeared in "Canadian Oil and Gas Industries" November 1, 1949)

"It is often thought that reserves should be developed before markets can be considered. The history of gas fields in the gas-producing areas of United States has clearly shown that an assured market develops large reserves. The reluctance of many operators to tie up large investments in gas fields, similar to that of Jumping Pound, when no market is in sight, has been and will continue to be a great deterrent to development in the Foothills. In areas known to have such tremendous prospects for gas production as many parts of Alberta

it is certain that the assurance of outside markets at a profitable price would have effect of quickly stimulating exploration. As has already been indicated when gas reserves were sought at the end of the war with the objective of establishing synthetic oil plants, gas in large quantities was found. The discovery of the Leduc oil field ended this search for gas but there is little doubt if at any time markets should be made available, the gas reserves could be quickly increased far beyond the amount now proven and indicated."

The above is illustrated by a study of the gas reserves of the Province of Alberta, prior to the discovery at Leduc, as set out in the Dinning Commission Report. Turner Valley and Viking-Kinsella were the two main gas reserves of the Province in 1940 when total reserves amounted to 2.4 trillion feet. Outside of Turner Valley, oil and gas exploration in the Province was at a low ebb. When it seemed that additional oil fields of consequence would or could not be found, a limited program to extend existing gas reserves and to discover new gas areas got under way, with the hope that the future gasoline supply of the Prairie Provinces could be provided in part from the expensive and wasteful method of converting natural gas to gasoline.

Imperial Oil Limited, concentrating its efforts in the Viking-Kinsella area, drilled about 30 gas wells, more than doubling the proven reserves of that area.

California Standard made important discoveries at Pinhorn, Medicine Hat, Princess and Steveville.

Union Oil Co. made a big discovery at Pendent Orielle, **Anglo Canadian** at Rainy Hills and Princess and **Shell Oil** at Jumping Pound.

Despite the expenditure of millions of dollars in the development of these new reserves the wells were capped when completed, to remain idle until such time as the costly synthetic gas plants were warranted. The startling fact is that because there was a possible new market the reserves of the Province jumped to 4.1 trillion feet in 1947.

Then came Leduc! With the great oil discovery at Leduc, followed later by Woodbend, Redwater, Golden Spike, Normandville and Excelsior, no longer was it necessary to figure our gasoline requirements would have to be met by expensive synthetic processes. Gas exploration, as such, ceased, but in the search for oil, requiring deeper drilling, more than 20 new gas fields have been discovered. Huge new reserves have been added so that at the end of 1949 the proven gas reserves of the Province are estimated at almost three times the total reserves of 1940.

The gas requirements of the people of Alberta, a prime requisite, are more than adequately provided for and now a surplus exists. The many new discoveries made from 1941-1949 are lying idle. But now a new and large market for gas exists on the Pacific Coast. If this market is made available gas development will again be accelerated and not only provide the gas necessary for the export market, but by many times add to the reserves which will always be available for the requirements of the people of Alberta.

From all the evidence at hand it is inevitable that in the near future the Government of the Province of Alberta will permit the production of natural gas for sale outside the Province. The policy of the Government has been clearly stated by **Premier Manning** as follows:

"The policy of the Government respecting gas export is three-fold:

- (1) to prohibit any export until fully satisfied that there are sufficient available reserves for Alberta's long-term needs;
- (2) when satisfied that a surplus exists over and above these requirements sufficient to justify export under sound conservation and proration practices, the Government will approve the export of such surplus with each application being considered on its own merits and in the light of all prevailing factors;
- (3) it will be a condition of any export permit that Canadian requirements must be given first priority."



*Each Joint is Electric
Welded*

Courtesy of Canadian Western Natural Gas Co. Limited

THE DOMINION PIPE LINE ACT

Without going into all the details, the Pipe Line Act is just this:

- A. Any company wishing to transport oil or gas from one province to another, or outside Canada, must be incorporated under a Private Bill passed by both the Senate and House of Commons.

- B. The route and all matters in connection with the construction of the line must be passed by the Board of Transport Commissioners.
- C. The export of gas and/or oil must be passed by the Minister of Trade and Commerce.

This Act was passed by the Dominion Government April 30, 1949.

"CANADA FIRST" POLICY

It is our firm conviction that in the transmission and export of gas from this country a CANADA FIRST policy should be adopted. Canadian consumers should be the first to be served. By building a pipeline through to Vancouver via a Canadian route that object will be accomplished and the greatest number of Canadians will receive priority.

There are large potential consumer demands for gas in Western Canada, East through to Winnipeg, and West to Vancouver. We believe that these Canadian requirements should form an integral and prior part of the eventual markets. As a result, the plans for the supply of gas to the Pacific Northwest and particularly the Van-

couver area were and are designed for the construction of an all-Canadian pipeline.

An all-Canadian line means that many additional communities in Alberta and British Columbia would be served with natural gas; it means that the major section of the transmission system would be under Canadian control; it means that this country would reap the benefits of the expenditure of large amounts of United States capital in the construction of the major portion of the pipelines within our own borders; it means that all questions of pipeline rates, safety regulations, and in fact all other controls, would be under the supervision of Canadian authorities.

THE COMPANY

Westcoast Transmission Company Limited, was incorporated under Special Act of Parliament, April 30, 1949, for the purpose of transporting gas and oil from the Province of Alberta to British Columbia and Pacific Coast cities. The formation of the Company is the culmination of fifteen years of intensive study and investigation. **Pacific Petroleum Ltd.** and its subsidiary **Peace River Natural Gas Co. Ltd.**, both Canadian Companies, have carried the development of the project to this point. **Sunray Oil Corporation** of Tulsa, Oklahoma, and Los Angeles, California, and several other large independent producers in the United States,

whose capital and reserves amount to many hundreds of millions of dollars, have now become associated with Westcoast Transmission Company in the construction of the pipe line.

The overall cost of the pipeline project, including gathering system, rights of way, ditching pipe, welding, wrapping and covering, and pumping stations is estimated at approximately \$100,000,000.

Leading Canadian and United States investment houses have become associated with the Company, assuring ample financing for the entire project.

PRELIMINARY INVESTIGATION AND WORK DONE TO DATE

In conjunction with the project of **WESTCOAST TRANSMISSION COMPANY LIMITED** to transport natural gas from Alberta and North Eastern British Columbia to Vancouver and United States Cities south of the border, the following is a brief summary of the plan of operations, the extent of work done to date, and the present activities of the Company and its associates within the Provinces of British Columbia and Alberta.

Preliminary work on the project of transporting natural gas to Vancouver and the Northwest United States cities was commenced by Frank M. McMahon in 1935. At that time a thorough investigation into the known and potential gas reserves of the Provinces was made. The developed and actual "on top of the ground" reserves as reported on by independent and Government engineers was accepted. The potential reserves were investigated and for this purpose geologists were retained to explore the undeveloped but patently obvious further sources of a supply of natural gas.

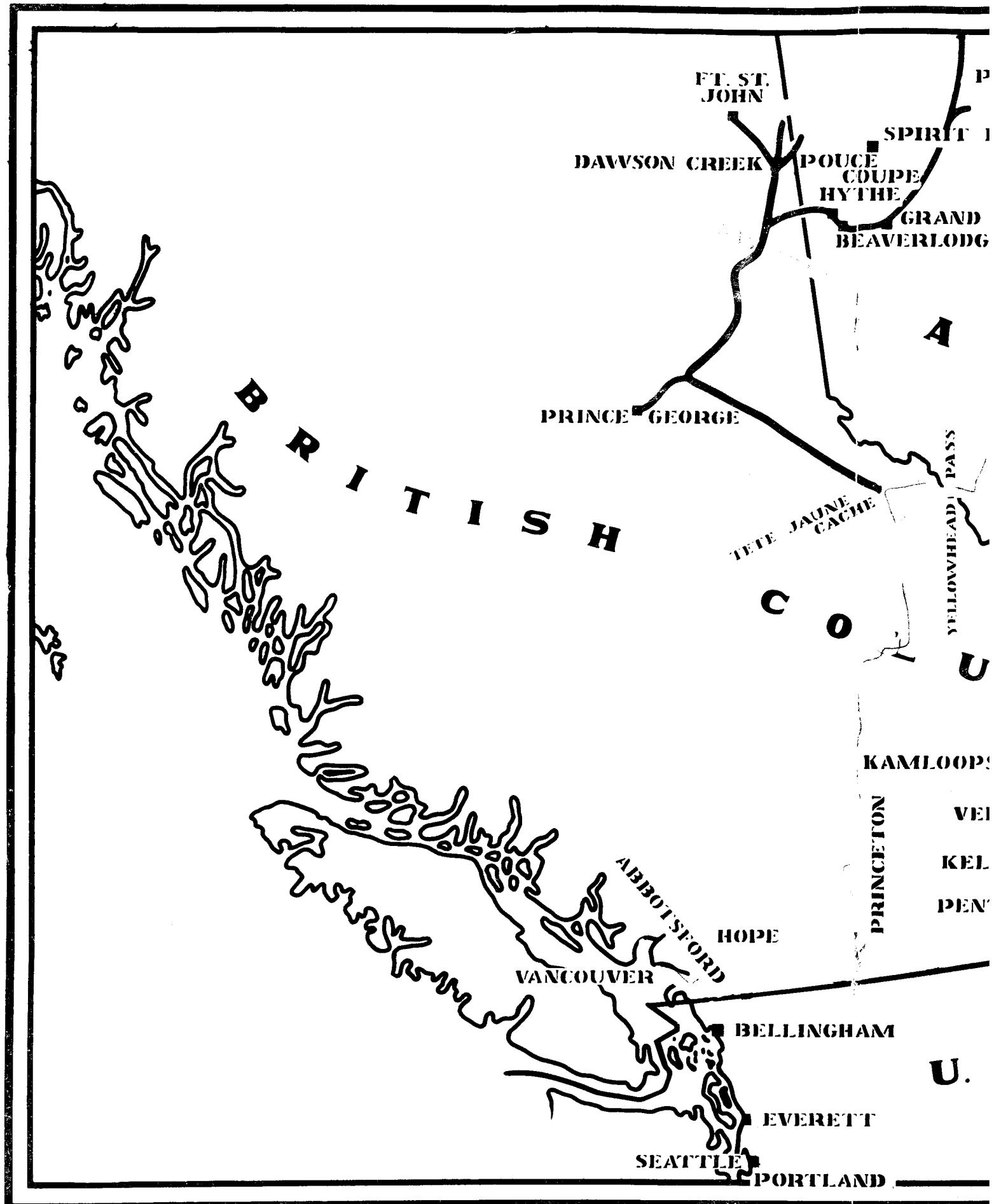
The market for gas in the Vancouver

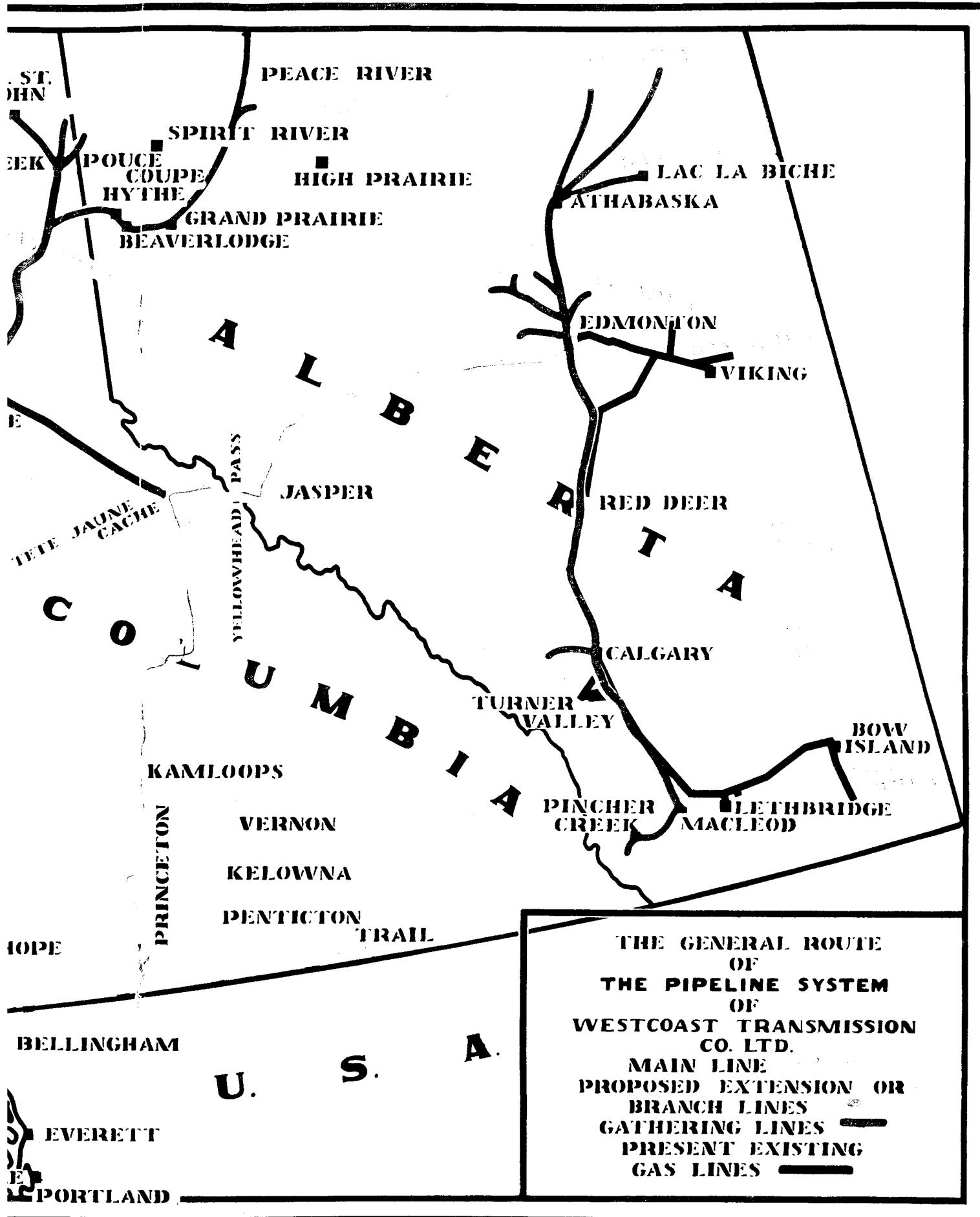
Area and in the neighboring cities in Western Washington and Northern Oregon was gone into at length with most of the information gathered from the Companies which were then engaged in supplying manufactured gas to these areas. At a later date an exhaustive report into these markets for natural gas in the Pacific Northwest cities, including Vancouver, prepared by Ebasco Services Incorporated of New York, was made available by the B. C. Electric Railway Company of Vancouver.

Possible pipe line routes were checked to determine the shortest and most economical methods of transporting the gas from sources of supply to ultimate markets.

A large amount of pertinent information was compiled pointing to three main factors:

- A. The market for natural gas in sufficient quantities to justify the large expenditure to construct the line was available.
- B. The route and length of the line was practical in all respects.





C. Further development of the gas fields of Alberta and of British Columbia would assure an abundant surplus supply of natural gas for these markets.

The work which had been under way on this project was necessarily suspended during the war, but was immediately resumed on its cessation.

Since 1945 the underlying group has acquired millions of acres under Reservations from the Alberta and British Columbia Governments. More than \$4,000,000 have already been spent on development of these properties, and active development is continuing.

In the work done to date, large gas re-

serves, the full extent of which will be determined by further drilling, have been discovered. Along the **British Columbia-Alberta** boundary in the **Peace River Area** a total of eight wells have been drilled. Three large gas wells were completed on the Alberta side with tested open flows of five million, thirty-three million and twenty-four million cubic feet per day. Three productive wells were completed in British Columbia indicating an inter-Provincial gas field of some magnitude. Other large reserves have been discovered at **Clyde, Calahoo, Redwater, etc.**

In addition to its own program, the group is assisting other operators in the same areas through the contribution of money and technical advice.

THE APPLICATION BEFORE THE ALBERTA GOVERNMENT

The Company now has an application before the Petroleum and Natural Gas Conservation Board asking permission to transport natural gas from Alberta, following an all Canadian route, to Vancouver and then to Pacific Coast markets.

There are two main points to be considered before this application may be granted:

- (1) That there are sufficient gas reserves available for Alberta's long term needs, and;
- (2) a surplus exists sufficient to justify export under sound conservation and proration principles.

These questions must be proved to the

Conservation Board by any company applying for a permit to take gas outside the Province.

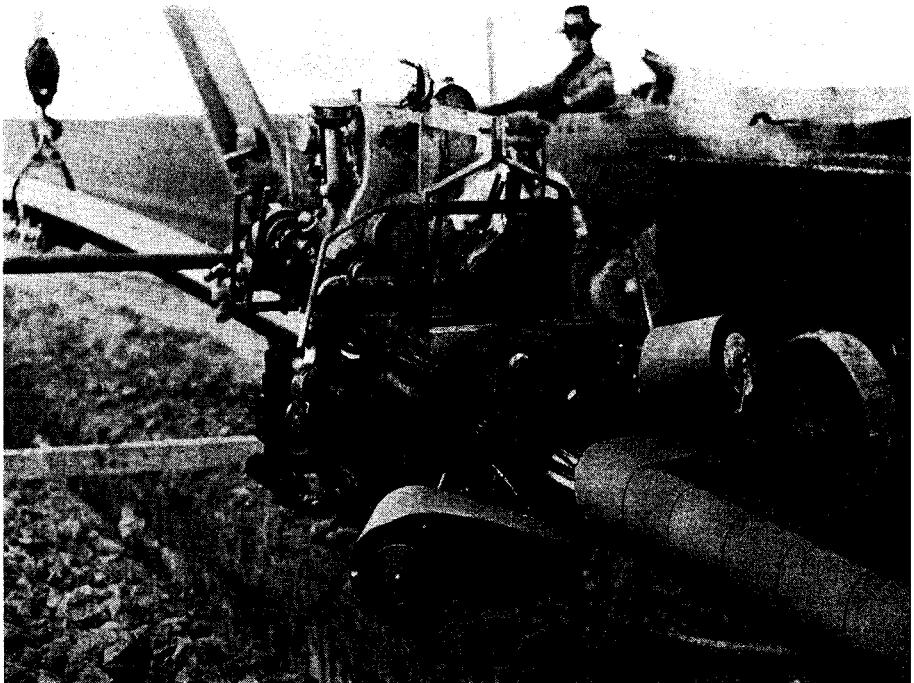
Space does not permit this booklet to state the evidence which will be presented to the Board in support of the Company's application as to these two points. Suffice it to say that the new discoveries which have been made have proved to the satisfaction of the company, its engineers and geologists, independent consulting engineers and geologists, and its financial backers that such reserves exist, sufficient not only for the long term needs of Alberta, but also sufficient for the justification of the large expenditures necessary to construct the transmission line.

THE GAS GATHERING SYSTEM

The export of gas will be a province-wide enterprise. Not one but many producing gas fields must be available to meet the demands of the Alberta consumers as well as the outside markets. This means the construction at a cost of many millions of dollars of a province-wide grid or gas gathering system. Such a grid would be integrated with the Calgary and Edmonton Gas

Companies and could if necessary supplement their present and future requirements. It would provide a market for flare gas or storage in exhausted fields. It would conserve dry gas fields for peak demands and for use in the distant future. It would make gas available to numerous communities which now exist without it. It would have a tendency to equalize and maintain the

*The Pipe is
Wrapped and
Coated Again*



Courtesy of Canadian Western Natural Gas Co. Limited

price of gas throughout the Province at a modest level.

The benefits to the Province generally of a gas gathering system are very great and very obvious. However its cost would be prohibitive if it were to be used for Provincial purposes only. Its construction depends on the export of gas.

Alberta Inter-Field Gas Lines Limited, with an initial capitalization of \$10,000,000, has been incorporated by a group of Canadians with the idea of building and operating such a grid as a strictly Alberta and Canadian enterprise. If they obtain the necessary authority and support, Westcoast Transmission might not itself be required to go into the business of gathering but would take delivery of the gathered gas at a point to be agreed on.

In the meantime, however, Westcoast's application before the Board provides for its own main gathering system within the Province which would:

1. Commence in Southwestern Alberta at **Pincher Creek** and follow a northern route through **Calgary** and **Red Deer** to **Edmonton** with gathering lines extending to the gas fields in northern Alberta.
2. Accept gas from all fields en route, tying in to existing distributing systems.
3. Make gas available on long term con-

tracts on an equitable price structure to both Northwestern Utilities at **Edmonton** and the Canadian Western Natural Gas Co. at **Calgary** to supply all further requirements of those systems.

4. Provide the frame work for the pooling of all gas reserves in the Province as recommended in the Report of the Dinning Commission.
5. Establish the basis of the recommended "Grid" system thus tying in all gas pools with distribution systems.
6. Provide a market for gas from newly discovered fields in the North.
7. Provide an incentive for the further development of gas in fields now lying dormant in other parts of the Province.
8. Assure a continuous source of gas for the greatest number of people in Alberta, and give **Albertans first priority to all the gas reserves in the Province**.
9. Make available a source of supply of gas to Western Pipeline for export to Winnipeg, thus serving more Canadians with natural gas.
10. Through feeder lines gathering gas in Northwestern Alberta, market gas from those areas and concurrently make gas available to those northern communities.

THE ALL CANADIAN ROUTE

Westcoast Transmission Company Limited is the only Company which has consistently sponsored an All Canadian Route to take gas to the Pacific Coast. The route now chosen for the main transmission line from Edmonton through the Yellowhead Pass to Vancouver is the shortest line from the approximate geographical centre of Alberta to Vancouver. The pass through the mountains is one of the lowest and most easily traversed. The only other mountainous terrain is through the Coast range where the line will follow the new Hope-Princeton Highway.

The entire length of the line has been inspected most minutely by the firm of Ford, Bacon & Davis, Inc., of New York, one of the largest oil and gas pipe line engineering firms in the world. Their report, which will be filed with the Conservation Board, shows the route of the line to be completely practical and economical in all respects.

A branch line which will gather gas in the Peace River areas of both Alberta and British Columbia will join with the main line near Tete Jaune Cache west of the Yellowhead. Thus through the network of gathering lines in northern, central and southern Alberta and the line from Peace

River, British Columbia and Alberta, gas from all parts of Alberta and northeastern British Columbia will find a market.

By reason of these gathering lines and the route of the main transmission system, thousands of Canadians will get gas that could not be provided by any other proposed line.

Cheap natural gas in abundant quantity will be made available to all of these communities. Because the pipe line will require all year around maintenance, roads will be improved and kept open twelve months of the year. This will facilitate transportation and communication generally along the entire route of the pipe line.

Further plans of the Company include a branch line to Trail and eventually south to serve the Spokane market and the atomic plant at Hanford, Washington.

The pipeline will continue south from a point near Vancouver to serve Pacific Coast cities of the United States such as Bellingham, Everett, Seattle, Tacoma, Olympia and Portland, and all other intervening points. By carrying gas to this large market the pipe line system will be able to supply gas at the lowest possible cost, particularly for all Canadian users.

UNITED STATES DOLLARS

The shortage of United States dollars is a problem that affects every Canadian and every effort is being bent by the Dominion Government to remedy that situation. Any commodity we have that can be sold to the United States will contribute directly in the all over plan to bring more United States dollars into Canada, and it is, therefore, necessary to get as many United States dollars as possible for each commodity sold.

Natural gas is such a commodity, one of which we have a surplus and is urgently

needed for fuel purposes in the Pacific Coast cities.

The construction of the pipe line to Vancouver will require large capital expenditures and it necessarily follows that the more of the line that is built in Canada the more capital will be spent in Canada for its construction. When the gas is sold at the United States border south of Vancouver, it will command more United States dollars for gas delivered than if it went directly south out of Canada through a shorter Canadian pipe line.

*The Pipe Line
Crosses a River*



Courtesy of Canadian Western Natural Gas Co. Limited

AN OIL PIPE LINE TO THE PACIFIC COAST

Proven production from Alberta's oil fields has already surpassed by several times the requirements of the Prairie Provinces. To provide wider markets, the Imperial Oil Limited is now building a pipe line from Edmonton to Superior, Wisconsin. This oil will find its way to Sarnia, Ontario, and United States markets, thus offsetting very materially the unfavorable trade balance caused by the purchase of United States oil for eastern and Pacific Coast markets.

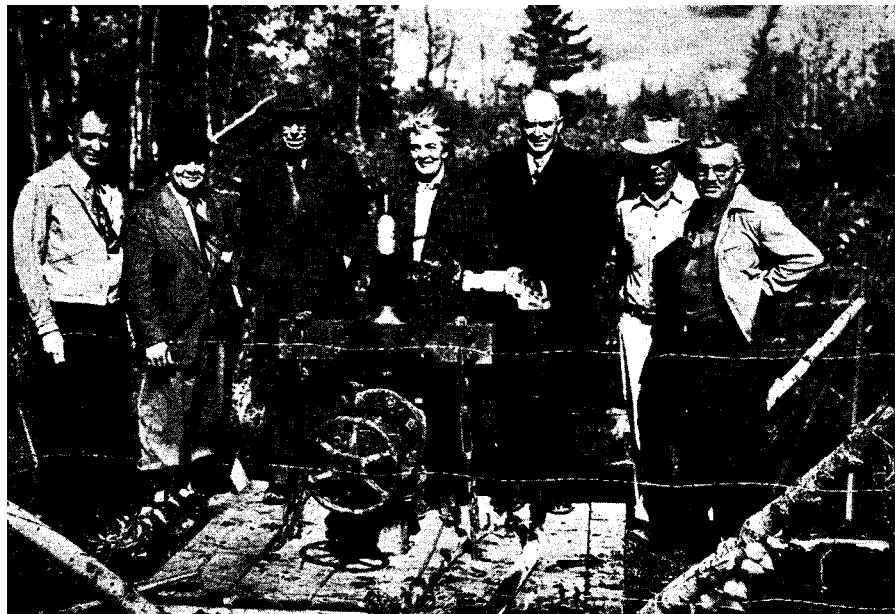
The British Columbia Coast market which accounts for approximately 30% of the oil consumption of Canada, is supplied almost entirely by California crude oil. California in turn imports large quantities of oil from Venezuela.

The new oil discovery at Normandville in the Alberta Peace River area, far removed from previously discovered fields, pre-

sages enormous development of an entirely new oil country. Judging from past experience, this is probably only the first of many new oil fields in that area, regarded by many geologists as the best oil and gas prospecting area in the Province. The time is, therefore, not too far distant when an economical outlet for that oil will be required.

The logical and most economical outlet for this oil is to Vancouver for the large and lucrative Pacific Coast market. By bringing Alberta, and possibly British Columbia, Crude oil to tidewater the whole Pacific Coast market from Alaska to California and foreign demands could economically be supplied.

Foreseeing this important northern oil development, the charter of Westcoast Transmission Company Limited provides for the transportation of oil as well as gas.



Courtesy of Ron Duke, Banff.

Premier and Mrs. Johnson
with Maj. Stewart, Deputy
Minister of Railways (B.C.)
Visit Peace River Natural
Gas Co. Well with Officials of
Pacific Petroleum Ltd.

NORTHERN ALBERTA AND BRITISH COLUMBIA DEVELOPMENT

One glance at a map showing the recent land acquisitions from the Alberta and British Columbia Governments will demonstrate that the greatest search for oil and gas in Canada and probably on the North American continent, is in the northern areas of these two Provinces. More than 25 million acres are under reservation from the Alberta Government extending north from Edmonton and westerly to the British Columbia border. In British Columbia close to 3 million acres are under development.

Oil discoveries of world wide importance have been made at Leduc, Woodbend, Golden Spike, Redwater, Simmons and Normandville. In the course of exploration more than 30 gas fields have been discovered, each represented by one or more productive wells. Reserves of oil discovered already exceed a billion barrels and new gas reserves amount to many trillions of cubic feet.

The scope of this development is briefly summarized by the following list of the larger operators and the acreage involved.

Imperial Oil Limited hold over 3,500,000 acres in the north country alone on which the big discoveries at Leduc, Redwater, Golden Spike, and Normandville are located.

Numerous wells are now being drilled and exhaustive geophysical work carried on throughout.

Stanolind Oil & Gas Company is carrying on an active drilling and exploration program on over 1,700,000 acres. Important gas discoveries have been made at Lac La Biche and Ellscott, and oil and gas at Barrhead.

Barnsdall, Honolulu and Seaboard Oil Companies have over 2,000,000 acres under reservation, all of which is under development.

Royalite Oil Company have recently acquired 600,000 acres along the Peace River, have drilled several producers at Redwater and with **Central Leduc Oils** drilled a big gas discovery at Lac La Biche on a 40,000 acre block. **Hudson's Bay Oil & Gas** and **Union Oil Company** are exploring on 1,500,000 acres in this area.

British American Oil Co. are working on 380,000 acres along Peace River and with **Hudson's Bay Oil & Gas** have drilled several good producers at Redwater.

Shell Oil Company have re-entered into active Alberta development on reservations aggregating 1,800,000 acres.

Cities Service, a newcomer to Canada but one of the larger American operators, have started work by joining with **British American Oil** in operations on 480,000 acres and a further 300,000 acres on its own account.

Socony Vacuum with 500,000 acres, **Amerada** with 400,000 acres, **The Texaco McColl-Frontenac** team with 500,000 acres, **Sun Oil** with 200,000 acres and **Pacific Western** with 100,000 acres, are all working in this area.

Gulf Oil Co. holding over 3,000,000 acres have made important discoveries of oil and gas and are at this time drilling in several localities.

Pacific Petroleum Ltd., **Sunray Oil Corporation**, **Pacific Western Oil Co.**, **Tide Water Associated Oil Co.**, **Princess Petroleum Ltd.**, etc., are carrying on extensive exploratory work over a 4,600,000 acre area. Gas discoveries have been made at Lesser Slave Lake and several rigs are now drilling.

Benedum & Trees with 1,000,000 acres, **California Standard** with 1,100,000 in the north and several times that much in Central Alberta are actively at work.

A. G. Bailey & Associates and **Long Island Petroleum**s have made a large gas discovery at Manowan Lake, as have **Home Oil** and **Anglo Canadian** at Elk Point and Redwater, and **Continental Oil Co. of Canada** at Boyle.

Many other operations are being carried on by **Pan Western Oil**, **British Dominion**, **Globe Oil**, **West Leduc**, **Homestead**, **Okalta**, **Calvan**, **Dekalta**, **Davies Petroleum** and numerous individuals and syndicates.

Across the British Columbia border over 1,000,000 acres are under reservation to **Phillips Petroleum (U.S.)** which Company is now drilling two wells on one of the largest gas seepages in Canada. **The Pacific Petroleum**, **Sunray Oil Co.** and **Peace River Natural Gas Co.** team have made important

gas discoveries on reservations totalling over 1,150,000 acres and at present are drilling further wells.

Following the **Imperial** discovery at Normandville more than ten million additional acres have been taken under Reservation in the Peace River area of Alberta. **Imperial Oil** have added 900,000 acres, **Shell** 1,400,000, **Phillips Petroleum (U.S.)** 1,000,000, **Stanolind** 900,000, and **Gulf** 400,000 acres. **Pacific Petroleum**s acquired 1,400,000 acres and have been joined by **Sunray Oil Co.** and **Tidewater Associates** in an extensive development program.

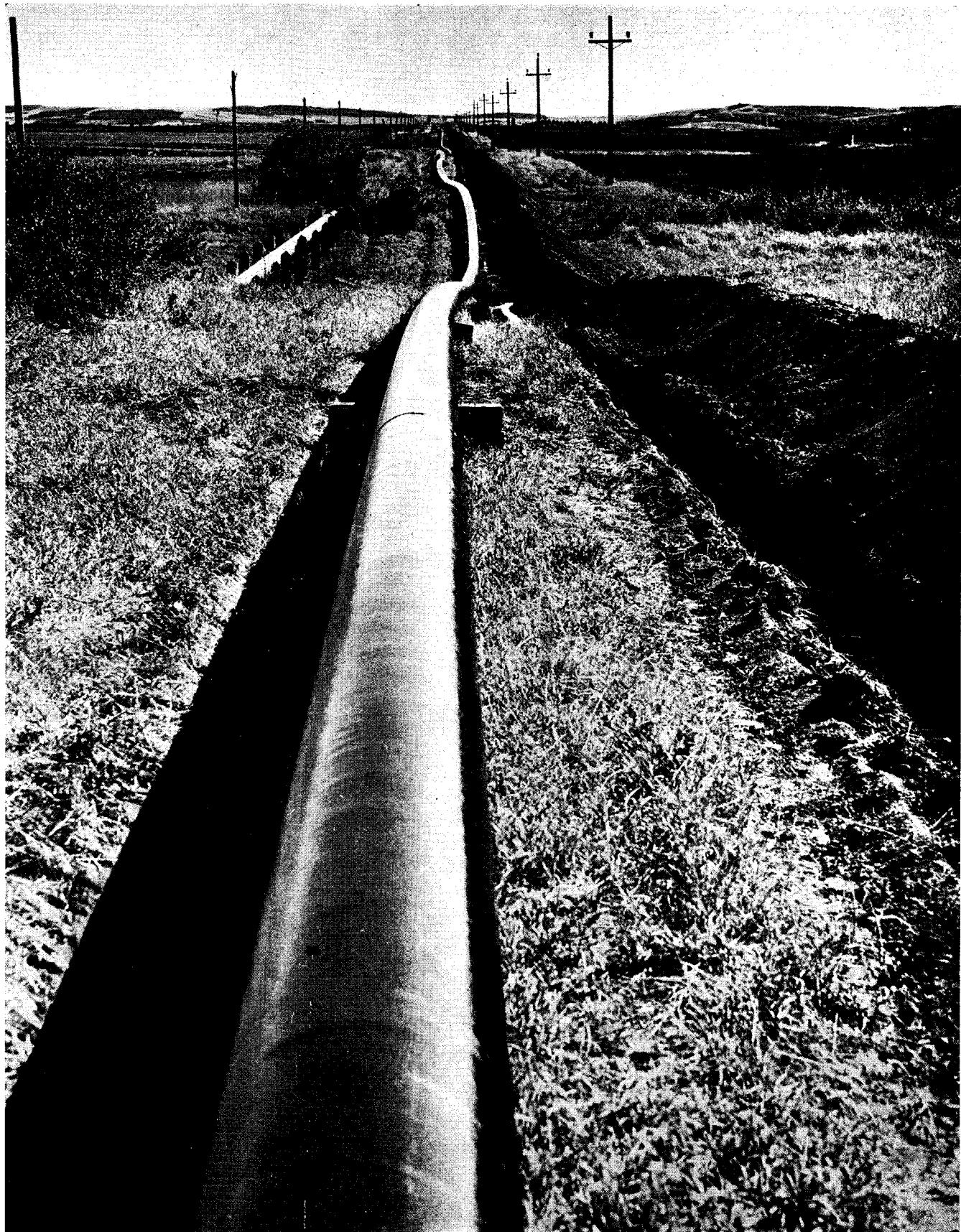
As previously mentioned the huge new discoveries of gas reserves are lying idle. If markets are made available for this gas the cost of the search for oil will be greatly reduced, thus resulting in a wider and more economical exploration for both. The sale of the gas will provide much additional revenue to the provinces in the way of royalties, taxes, etc., since practically all the ground is owned by the Government. As the search for oil continues more gas reserves will be found and as the search for gas continues as a result of an outlet (for gas) being provided, more oil will be discovered. The two go hand in hand.

Gas will discover Oil Oil will discover Gas

Not only the operators and the thousands of shareholders they represent, but every person living in this great western area, the Governments of Alberta, British Columbia and Canada as a whole will stand to benefit from this development. But in order that the greatest benefits may be derived, an outlet for both the gas and oil must soon be made available. It can also be said without fear of successful contradiction that any plan to take gas from Alberta to outside markets which does not include the production from the northern area, will definitely retard development at the expense of all concerned.

THE DEVELOPMENT OF OUR NATURAL RESOURCES

The potential wealth of Canada can be measured in terms of the natural resources **available** for our use. The growth and prosperity of Canada has been measured in the past, and will be gauged in the future by the degree of use made of these resources. Undeveloped resources are frozen assets contributing nothing to the present and do no more than occupy space unless they are put to work to serve human needs. Our minerals, our water power, our forests and our oil and gas lands **must be developed and utilized** before we can reap the benefits they hold in store. We have everything to gain from the application of sound common sense in the development of all our natural resources.



Courtesy of Canadian Western Natural Gas Co. Limited

Gas Pipe Line Construction—New 16" Line from Turner Valley to Calgary, Alberta

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